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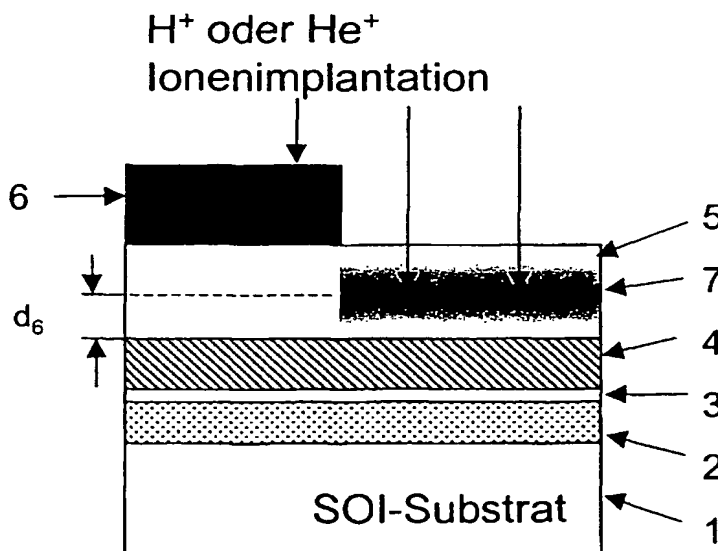
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[Fortsetzung auf der nächsten Seite]

(54) Title: METHOD FOR PRODUCING A TENSIONED LAYER ON A SUBSTRATE, AND A LAYER STRUCTURE

(54) Bezeichnung: VERFAHREN ZUR HERSTELLUNG EINER VERSPANNTEN SCHICHT AUF EINEM SUBSTRAT UND
SCHICHTSTRUKTUR



(57) Abstract: The invention relates to a method
for producing a tensioned layer on a substrate
involving the following steps: producing a
defect area in a layer adjacent to the layer to be
tensioned, and; relaxing at least one layer adjacent
to the layer to be tensioned. Additional layers
can be epitaxially deposited. Layer structures
formed in this manner are advantageously suited
for components of all types.

(57) Zusammenfassung: Die Erfindung betrifft
ein Verfahren zur Herstellung einer verspannten
Schicht auf einem Substrat mit den Schritten:
Erzeugung eines Defektbereichs in einem zu
zu verspannenden Schicht benachbarten
Schicht; Relaxation mindestens einer zu der zu
verspannenden Schicht benachbarten Schicht. Es
können epitaktisch weitere Schichten angeordnet
werden. Derartig gebildete Schichtstrukturen
sind vorteilhaft geeignet für verschiedenartigste
Bauelemente.

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INTERNATIONAL SEARCH REPORT

International Application No
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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H01L21/20

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H01L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
E	<p>WO 2004/082001 A (MANTL SIEGFRIED ; KERNFORSCHUNGSANLAGE JUELICH (DE)) 23 September 2004 (2004-09-23)</p> <p>the whole document</p> <p>----- -/-</p>	<p>1-8, 10, 11, 13, 15, 16, 18-30, 41, 42, 47-49, 51, 54, 55, 60-63, 74, 76, 80-86, 88-91, 93-96</p>

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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G document member of the same patent family

Date of the actual completion of the international search

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International Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, X	WO 03/092058 A (HOLLAENDER BERNHARD ; MANTL SIEGFRIED (DE); ZHAO QUING-TAI (DE); KERNF) 6 November 2003 (2003-11-06)	1-8, 13, 18-28, 31, 46, 48, 49, 62, 63, 66-70, 74, 76, 80-84, 88-91, 93, 95, 96
	the whole document	
P, X	WO 03/098664 A (UNIV CALIFORNIA) 27 November 2003 (2003-11-27) paragraphs '0051! - '0063!	80, 81, 83, 90, 91
X	US 2002/185686 A1 (MOONEY PATRICIA M ET AL) 12 December 2002 (2002-12-12)	1-9, 15, 16, 18-28, 31, 32, 34-36, 40-68, 70, 72, 74-76, 80-96
	the whole document	
X	WO 02/071495 A (AMBERWAVE SYSTEMS CORP) 12 September 2002 (2002-09-12)	1-5, 7-9, 13, 14, 17, 18, 24-26, 31, 32, 35, 40-46, 49, 54-59, 62, 63, 68, 70, 72, 74, 75, 80-96
	page 8, lines 4-18; figure 7B	
X	US 5 442 205 A (BRASEN DANIEL ET AL) 15 August 1995 (1995-08-15)	1-14, 17-26, 31, 32, 35, 36, 40-46, 48-51, 54-63, 67, 68, 70, 72, 74, 75, 80-96
	column 9, line 5 - column 10, line 7; figure 5	

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 2004082001	A	23-09-2004	DE 10310740 A1 WO 2004082001 A1	30-09-2004 23-09-2004
WO 03092058	A	06-11-2003	DE 10218381 A1 WO 03092058 A2	26-02-2004 06-11-2003
WO 03098664	A	27-11-2003	WO 03098664 A2 US 2003219937 A1	27-11-2003 27-11-2003
US 2002185686	A1	12-12-2002	US 2003218189 A1 US 2003201468 A1 TW 546713 B	27-11-2003 30-10-2003 11-08-2003
WO 02071495	A	12-09-2002	US 2002125497 A1 US 6677192 B1 EP 1364411 A1 WO 02071493 A2 WO 02071495 A1 WO 02071491 A1 WO 02071488 A1 US 2004161947 A1 US 6703688 B1 US 2003077867 A1 US 2003089901 A1 US 2002123183 A1 US 2002123167 A1 US 6593641 B1	12-09-2002 13-01-2004 26-11-2003 12-09-2002 12-09-2002 12-09-2002 12-09-2002 19-08-2004 09-03-2004 24-04-2003 15-05-2003 05-09-2002 05-09-2002 15-07-2003
US 5442205	A	15-08-1995	US 5221413 A EP 0514018 A2 JP 2792785 B2 JP 6252046 A	22-06-1993 19-11-1992 03-09-1998 09-09-1994

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